

## IN THE CLAIMS

The following is a complete list of the claims now pending; this listing replaces all earlier versions and listings of the claims.

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1. (Currently Amended) A method of generating an image, ~~said~~ the image to be formed by rendering and compositing at least a plurality of graphical objects, each ~~said~~ object having a predetermined outline, said method comprising ~~the steps of:~~
- a dividing step, of dividing a space in which ~~said~~ the outlines are defined into a plurality of regions, each ~~said~~ region being defined by at least one region outline substantially following at least one of ~~said~~ the predetermined outlines or parts thereof, wherein at least one horizontal or vertical segment of one or more of the said region outlines are substantially formed by is selected from corresponding horizontal or vertical segments of a virtual grid encompassing said the space, depending on the predetermined outlines;
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- a manipulation step, of manipulating ~~said~~ the regions to determine a plurality of further regions, at least one horizontal or vertical segment of one or more of the said further regions being dependent selected from corresponding horizontal or vertical on-said segments of said the virtual grid, wherein each said further region has a corresponding compositing expression;
- a classification step, of classifying ~~said~~ the further regions according to at least one attribute of any one or more of the said graphical objects which substantially fall within said the further regions;

a modification step, of modifying each ~~said~~ corresponding compositing expression according to a classification of each ~~said~~ further region to form an optimized compositing expression for each ~~said~~ further region compared to ~~said~~ the corresponding compositing expression, ~~said~~ the corresponding compositing expressions being optimized by eliminating one or more objects within ~~said~~ the further regions from one or more of ~~said~~ the corresponding expressions, depending on ~~said~~ the classifications, ~~without modifying while maintaining the~~ said image to be generated; and

a generation step, of generating ~~said~~ the image by compositing ~~said~~ the plurality of graphical objects using each of ~~said~~ the optimized compositing expressions.

2. (Currently Amended) A method according to claim 1, wherein ~~said~~ the attribute is selected from the group consisting of ~~colour~~ color, opacity and object outline.

3. (Currently Amended) A method according to claim 1, wherein ~~said~~ manipulating ~~said~~ the regions comprises applying set operations to ~~said~~ the regions.

4. (Currently Amended) A method according to claim 3, wherein ~~said~~ the set operations include difference and/or intersection operations.

5. (Currently Amended) A method according claim 1, wherein ~~said~~ the grid is regularly spaced and preferably orthogonally based.

6. (Currently Amended) A method according to claim 1, wherein ~~said~~ the grid is irregularly shaped.

7. (Original) A method according to claim 1, wherein the compositing expression is a hierarchically structured representation of the image.

8. (Currently Amended) A method according to claim 1, wherein ~~said~~ the image is at least in part a pixel-based image.

9. (Original) A method according to claim 1, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

10. (Currently Amended) A method according to claim 9, wherein ~~said~~ the compositing expression is optimized based on a value of ~~said~~ the flag for contributing objects.

11. (Currently Amended) A method according to claim 1, wherein a wholly opaque object in ~~said~~ the region acts to eliminate one or more objects within ~~said~~ the further region from ~~said~~ the compositing expressions.

12. (Currently Amended) A method according to claim 1, wherein a wholly transparent object in ~~said~~ the region eliminates at least itself from ~~said~~ the compositing expression.

13. (Currently Amended) A method according to claim 7, wherein said modifying comprises modifying a manner in which said the compositing expression is evaluated without modifying said the hierarchically structured representation.

14. (Currently Amended) A method of generating an image, said the image to be formed by rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said method comprising ~~the steps of:~~

a dividing step, of dividing a space in which said the outlines are defined into a plurality of regions, each said region being defined by at least one region outline substantially following at least one of said the predetermined outlines or parts thereof, wherein at least one horizontal or vertical segment of one or more of the said region outlines is selected from corresponding horizontal or vertical ~~are substantially formed by~~ segments of a virtual grid encompassing said the space, depending on the predetermined outlines, wherein each object has two region outlines arranged either side of said the predetermined outline to thus define three regions for each said object, and wherein each said region has a corresponding compositing expression;

a classification step, of classifying said the regions according to at least one attribute of any one or more of the said graphical objects which substantially fall within said the regions;

a modification step, of modifying each said corresponding compositing expression according to a classification of each said region to form an optimized compositing expression for each said region compared to said the corresponding compositing expression, said

the corresponding compositing expressions being optimized by eliminating one or more objects within ~~said further~~ the regions from one or more of ~~said~~ the corresponding expressions, depending on ~~said~~ the classifications, ~~without modifying said~~ while maintaining the image to be generated; and

a generation step, of generating ~~said~~ the image by compositing ~~said~~ the plurality of graphical objects using each of ~~said~~ the optimized compositing expressions.

15. (Currently Amended) A method according to claim 14, wherein ~~said~~ the attribute is selected from the group consisting of ~~colour~~ color, opacity and object outline.

16. (Currently Amended) A method according to claim 14, wherein ~~said~~ the grid is regularly spaced and preferably orthogonally based.

17. (Currently Amended) A method according to claim 14, wherein ~~said~~ the grid is irregularly shaped.

18. (Currently Amended) A method according to claim 14, wherein ~~said~~ the compositing expression is a hierarchically structured representation of the image.

19. (Currently Amended) A method according to claim 14, wherein ~~said~~ the image is at least in part a pixel-based image.

20. (Original) A method according to claim 14, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

21. (Currently Amended) A method according to claim 20, wherein ~~said~~ the compositing expression is optimized based on a value of ~~said~~ the flag for contributing objects.

22. (Currently Amended) A method according to claim 14, wherein a wholly opaque object in ~~said~~ the region acts to eliminate one or more objects within ~~said~~ the further region from ~~said~~ the compositing expressions.

C、 23. (Currently Amended) A method according to claim 14, wherein a wholly transparent object in ~~said~~ the region eliminates at least itself from ~~said~~ the compositing expression.

24. (Currently Amended) A method according to claim 18, wherein said modifying comprises modifying a manner in which ~~said~~ the compositing expression is evaluated without modifying ~~said~~ the hierarchically structured representation.

25. (Currently Amended) An apparatus for generating an image, ~~said~~ the image to be formed by rendering and compositing at least a plurality of graphical objects, each ~~said~~ object having a predetermined outline, said apparatus comprising:

dividing means for dividing a space in which ~~said~~ the outlines are defined into a plurality of regions, each ~~said~~ region being defined by at least one region outline substantially following at least one of ~~said~~ the predetermined outlines or parts thereof, wherein at least one horizontal or vertical segment of one or more of the said region outlines is selected from corresponding horizontal or vertical ~~are substantially formed by~~ segments of a virtual grid encompassing ~~said~~ the space, depending on said predetermined outlines;

manipulating means for manipulating ~~said~~ the regions to determine a plurality of further regions, at least one horizontal or vertical segment of one or more of the said further regions being selected from corresponding horizontal or vertical ~~dependent on said~~ segments of ~~said~~ the virtual grid, wherein each ~~said~~ further region has a corresponding compositing expression;

classifying means for classifying ~~said~~ the further regions according to at least one attribute of any one or more of the said graphical objects which substantially fall within ~~said~~ the further regions;

modifying means for modifying each ~~said~~ corresponding compositing expression according to a classification of each ~~said~~ further region to form an optimized compositing expression for each ~~said~~ further region compared to ~~said~~ the corresponding compositing expression, ~~said~~ the corresponding compositing expressions being optimized by eliminating one or more objects within ~~said~~ the further regions from one or more of ~~said~~ the corresponding expressions, depending on ~~said~~ the classifications, ~~without modifying while~~ maintaining the said image to be generated; and

generating means for generating said the image by compositing said the plurality of graphical objects using each of said the optimized compositing expressions.

26. (Currently Amended) An apparatus according to claim 25, wherein said the attribute is selected from the group consisting of ~~colour~~ color, opacity and object outline.

27. (Currently Amended) An apparatus according to claim 25, wherein said manipulating said the regions comprises applying set operations to said the regions.

28. (Currently Amended) An apparatus according to claim 27, wherein said the set operations include difference and/or intersection operations.

29. (Currently Amended) An apparatus according to claim 25, wherein said the grid is regularly spaced and preferably orthogonally based.

30. (Currently Amended) An apparatus according to claim 25, wherein said the grid is irregularly shaped.

31. (Currently Amended) An apparatus according to claim 25, wherein said the compositing expression is a hierarchically structured representation of the image.



32. (Currently Amended) An apparatus according to claim 25, wherein ~~said~~ the image is at least in part a pixel-based image.

33. (Original) An apparatus according to claim 25, wherein a flag is stored to indicate whether data of an object is opaque or ordinary,

34. (Currently Amended) An apparatus according to claim 33, wherein ~~said~~ the compositing expression is optimized based on a value of ~~said~~ the flag for contributing objects.

35. (Currently Amended) An apparatus according to claim 25, wherein a wholly opaque object in ~~said~~ the region acts to eliminate one or more objects within ~~said~~ the further region from ~~said~~ the compositing expressions.

36. (Currently Amended) An apparatus according to claim 25, wherein a wholly transparent object in ~~said~~ the region eliminates at least itself from ~~said~~ the compositing expression.

37. (Currently Amended) An apparatus according to claim 31, wherein ~~said~~ the modifying comprises modifying a manner in which ~~said~~ the compositing expression is evaluated without modifying ~~said~~ the hierarchically structured representation.

38. (Currently Amended) An apparatus for generating an image, ~~said the~~ image to be formed by rendering and compositing at least a plurality of graphical objects, each ~~said~~ object having a predetermined outline, said apparatus comprising:

dividing means for dividing a space in which ~~said the~~ outlines are defined into a plurality of regions, each ~~said~~ region being defined by at least one region outline substantially following at least one of ~~said the~~ predetermined outlines or parts thereof, wherein at least one horizontal or vertical segment of one or more of the said region outlines is selected from corresponding horizontal or vertical ~~are substantially formed by~~ segments of a virtual grid encompassing ~~said the~~ space, depending on the predetermined outlines, wherein each object has two region outlines arranged either side of ~~said the~~ predetermined outline to thus define three regions for each ~~said~~ object, and wherein each ~~said~~ region has a corresponding compositing expression;

classifying means for classifying ~~said the~~ regions according to at least one attribute of any one or more of the said graphical objects which substantially fall within ~~said the~~ regions;

modifying means for modifying each ~~said~~ corresponding compositing expression according to a classification of each ~~said~~ region to form an optimized compositing expression for each ~~said~~ region compared to ~~said the~~ corresponding compositing expression, ~~said the~~ d corresponding compositing expressions being optimized by eliminating one or more objects within ~~said further the~~ regions from one or more of ~~said the~~ corresponding expressions, depending on ~~said the~~ classifications, while maintaining ~~without modifying said the~~ image to be generated; and

generation means for generating ~~said~~ the image by compositing ~~said~~ the plurality of graphical objects using each of ~~said~~ the optimized compositing expressions.

39. (Currently Amended) An apparatus according to claim 38, wherein ~~said~~ the attribute is selected from the group consisting of ~~colour~~ color, opacity and object outline.

40. (Currently Amended) An apparatus according to claim 38, wherein ~~said~~ the grid is regularly spaced and preferably orthogonally based.

41. (Currently Amended) An apparatus according to claim 38, wherein ~~said~~ the grid is irregularly shaped.

42. (Currently Amended) An apparatus according to claim 38, wherein ~~said~~ the compositing expression is a hierarchically structured representation of the image.

43. (Currently Amended) An apparatus according to claim 38, wherein ~~said~~ the image is at least in part a pixel-based image.

44. (Original) An apparatus according to claim 38, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

45. (Currently Amended) An apparatus according to claim 44, wherein said the compositing expression is optimized based on a value of said the flag for contributing objects.

46. (Currently Amended) An apparatus according to claim 38, wherein a wholly opaque object in said the region acts to eliminate one or more objects within said the further region from said the compositing expressions.

47. (Currently Amended) An apparatus according to claim 38, wherein a wholly transparent object in said the region eliminates at least itself from said the compositing expression.

48. (Currently Amended) An apparatus according to claim 42, wherein said modifying comprises modifying a manner in which said the compositing expression is evaluated without modifying said the hierarchically structured representation.

49. (Currently Amended) A computer program product including a computer readable medium having a plurality of software modules for generating an image, said the image to be formed by rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said computer program product comprising:  
    a dividing module for dividing a space in which said the outlines are defined into a plurality of regions, each said region being defined by at least one region outline

substantially following at least one of said the predetermined outlines or parts thereof, wherein at least one horizontal or vertical segment of one or more of the said region outlines is selected from corresponding horizontal or vertical ~~are substantially formed by~~ segments of a virtual grid encompassing said the space, depending on said predetermined outlines;

a manipulating module for manipulating said the regions to determine a plurality of further regions, at least one horizontal or vertical segment of one or more of the said further regions being ~~dependent~~ selected from corresponding horizontal or vertical ~~on said~~ segments of said the virtual grid, wherein each said further region has a corresponding compositing expression;

C1 a classifying module for classifying said the further regions according to at least one attribute of any one or more of the said graphical objects which substantially fall within said the further regions;

a modifying module for modifying each said corresponding compositing expression according to a classification of each said further region to form an optimized compositing expression for each said further region compared to said the corresponding compositing expression, said the corresponding compositing expressions being optimized by eliminating one or more objects within said the further regions from one or more of said the corresponding expressions, depending on said the classifications, while maintaining without modifying said the image to be generated; and

generating module for generating said the image by compositing said the plurality of graphical objects using each of said the optimized compositing expressions.

50. (Currently Amended) A computer program product according to claim 49, wherein ~~said~~ the attribute is selected from the group consisting of ~~colour~~ color, opacity and object outline.

51. (Currently Amended) A computer program product according to claim 49, wherein said manipulating ~~said~~ the regions comprises applying set operations to ~~said~~ the regions.

52. (Currently Amended) A computer program product according to claim 51, wherein ~~said~~ the set operations include difference and/or intersection operations.

53. (Currently Amended) A computer program product according to claim 49, wherein ~~said~~ the grid is regularly spaced and preferably orthogonally based.

54. (Currently Amended) A computer program product according to claim 49, wherein ~~said~~ the grid is irregularly shaped.

55. (Currently Amended) A computer program product according to claim 49, wherein ~~said~~ the compositing expression is a hierarchically structured representation of the image.

56. (Currently Amended) A computer program product according to claim 49, wherein ~~said~~ the image is at least in part a pixel-based image.

57. (Original) A computer program product according to claim 49, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

58. (Currently Amended) A computer program product according to claim 57, wherein ~~said~~ the compositing expression is optimized based on a value of ~~said~~ the flag for contributing objects.

c\ 59. (Currently Amended) A computer program product according to claim 49, wherein a wholly opaque object in ~~said~~ the region acts to eliminate one or more objects within ~~said~~ the further region from ~~said~~ the compositing expressions.

60. (Currently Amended) A computer program product according to claim 49, wherein a wholly transparent object in ~~said~~ the region eliminates at least itself from ~~said~~ the compositing expression.

61. (Currently Amended) A computer program product according to claim 55, wherein said modifying comprises modifying a manner in which ~~said~~ the compositing expression is evaluated without modifying ~~said~~ the hierarchically structured representation.

62. (Currently Amended) A computer program product including a computer readable medium having a plurality of software modules for generating an image, said the image to be formed by rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said computer program product comprising:

a dividing module for dividing a space in which said the outlines are defined into a plurality of regions, each said region being defined by at least one region outline substantially following at least one of said the predetermined outlines or parts thereof, wherein at least one horizontal or vertical segment of one or more of the said region outlines is selected from corresponding horizontal or vertical ~~are substantially formed by~~ segments of a virtual grid encompassing said the space, depending on the predetermined outlines, wherein each object has two region outlines arranged either side of said the predetermined outline to thus define three regions for each said object, and wherein each said region has a corresponding compositing expression;

a classifying module for classifying said the regions according to at least one attribute of any one or more of said the graphical objects which substantially fall within said the regions;

a modifying module for modifying each said corresponding compositing expression according to a classification of each said region to form an optimized compositing expression for each said region compared to said the corresponding compositing expression, said the corresponding compositing expressions being optimized by eliminating one or more objects within said further the regions from one or more of said the corresponding



expressions, depending on ~~said the~~ classifications, ~~while maintaining without modifying said the~~ image to be generated; and

a generation module for generating ~~said the~~ image by compositing ~~said the~~ plurality of graphical objects using each of ~~said the~~ optimized compositing expressions.

63. (Currently Amended) A computer program product according to claim 62, wherein ~~said the~~ attribute is selected from the group consisting of ~~colour~~ color, opacity and object outline.

64. (Currently Amended) A computer program product according to claim 62, wherein ~~said the~~ grid is regularly spaced and preferably orthogonally based.

65. (Currently Amended) A computer program product according to claim 62, wherein ~~said the~~ grid is irregularly shaped.

66. (Currently Amended) A computer program product according to claim 62, wherein ~~said the~~ compositing expression is a hierarchically structured representation of the image.

67. (Currently Amended) A computer program product according to claim 62, wherein ~~said the~~ image is at least in part a pixel-based image,

68. (Original) A computer program product according to claim 62, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

69. (Currently Amended) A computer program product according to claim 68, wherein ~~said~~ the compositing expression is optimized based on a value of ~~said~~ the flag for contributing objects.

70. (Currently Amended) A computer program product according to claim 62, wherein a wholly opaque object in ~~said~~ the region acts to eliminate one or more objects within ~~said~~ the further region from ~~said~~ the compositing expressions.

71. (Currently Amended) A computer program product according to claim 62, wherein a wholly transparent object in ~~said~~ the region eliminates at least itself from ~~said~~ the compositing expression.

72. (Currently Amended) A computer program product according to claim 66, wherein said modifying comprises modifying a manner in which ~~said~~ the compositing expression is evaluated without modifying ~~said~~ the hierarchically structured representation.

73. (Currently Amended) A method according to claim 1, wherein one or more objects within ~~said~~ the further regions are eliminated from one or more of ~~said~~ the corresponding compositing expressions depending on ~~said~~ the classifications.

74. (Currently Amended) An apparatus according to claim 25, wherein said modifying means is configured to eliminate one or more objects within ~~said~~ the further regions from one or more of ~~said~~ the corresponding compositing expressions depending on ~~said~~ the classifications.

75. (Currently Amended) A computer program product according to claim 49, wherein said modifying module is configured to eliminate one or more objects within ~~said~~ the further regions from one or more of ~~said~~ the corresponding compositing expressions depending on ~~said~~ the classifications.

76. (Cancelled)

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